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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/965,417	09/27/2001	Richard Charles Allen	56233US002	3811

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EXAMINER

VARGOT, MATHIEU D

ART UNIT	PAPER NUMBER
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1732

DATE MAILED: 08/13/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/965,417

Applicant(s)

ALLEN et al.

Examiner

M. VARGOT

Group Art Unit

1732

— The MAILING DATE of this communication appears on the cover sheet beneath the correspondence address —

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, such period shall, by default, expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- ☐ Responsive to communication(s) filed on \_\_\_\_\_
- ☐ This action is FINAL.
- ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 111; 453 O.G. 213.

## Disposition of Claims

- ☒ Claim(s) 1-23 is/are pending in the application.
- ☐ Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- ☒ Claim(s) 1-17 + 20-23 is/are rejected.
- ☒ Claim(s) 18 + 19 is/are objected to.
- ☐ Claim(s) \_\_\_\_\_ are subject to restriction or election requirement

## Application Papers

- ☐ The proposed drawing correction, filed on \_\_\_\_\_ is ☐ approved ☐ disapproved.
- ☐ The drawing(s) filed on \_\_\_\_\_ is/are objected to by the Examiner
- ☐ The specification is objected to by the Examiner.
- ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. § 119 (a)-(d)

- ☐ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119 (a)-(d).
- ☐ All ☐ Some\* ☐ None of the:
  - ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_
  - ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a))

\*Certified copies not received: \_\_\_\_\_

## Attachment(s)

- ☒ Information Disclosure Statement(s), PTO-1449, Paper No(s). 4,5 + 7
- ☐ Interview Summary, PTO-413
- ☐ Notice of Reference(s) Cited, PTO-892
- ☐ Notice of Informal Patent Application, PTO-152
- ☐ Notice of Draftsperson's Patent Drawing Review, PTO-948
- ☐ Other \_\_\_\_\_

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1. According to Rule 1.26, claims 21-24 have been renumbered as 20-23, respectively--ie, there was no claim 20 as originally filed.
2. Claims 18 and 19 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
3. Applicant is requested to provide the serial number for the copending application disclosed at page 22 of the specification.
4. Claims 11 and 13 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 11 and 13 are submitted to be indefinite in that they are written in a manner not supported by the instant specification. For instance, page 13, last paragraph of the instant specification discloses that the twist angle (of the aligned liquid crystal) is much smaller than the phase retardation of the **polarization rotator element**, not the phase retardation of the **aligned liquid crystal layer** as recited in claims 11 and 13. Clarification is required.

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless -

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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Claims 1-14 are rejected under 35 U.S.C. 102(b) as being anticipated by British Patent Application 2,326,727.

The applied reference (see Fig. 1) discloses the instant method of making a polarization rotator element by forming a first alignment layer (5) on the surface of a polarizing element (3), disposing a liquid crystal material (6) on the first alignment layer and aligning the liquid crystal layer. It is submitted inherent that the liquid crystal material is aligned in that the purpose of the alignment layer is to do so--also, see page 12 of the reference, lines 9-11, which discloses that the nematic liquid crystal contains a chiral dopant "so as to produce a 90 degree twisted nematic cell". The disclosure of the twist angle inherently means that the optical element is a polarization rotator and that the liquid crystal has to be aligned in some manner to provide the twist angle for the polarized light. A second alignment layer (7) is formed on a second polarizing film (8) and the cell walls are assembled with the liquid crystal material between them. The 90 degree twist means that the liquid crystal layer rotates the polarization of light by more than 5 degrees. It is submitted also inherent that the liquid crystal is aligned with a twist angle which is smaller than the phase retardation of the polarization rotator element itself as set forth in claims 11 and 13 since the cell shown in the applied reference in fact functions as a rotator element. Concerning instant claims 2 and 3, see page 18, lines 2-4, wherein the polarizer is disclosed as functioning as the alignment means.

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

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(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 21 and 22 are rejected under 35 U.S.C. 103(a) as being unpatentable over British

Patent Application 2,326,727.

British -727 discloses the basic method as set forth in paragraph 4, supra, lacking essentially that the polarizing films are unwound. The applied reference discloses polymer film polarizers and polymer films are conventionally wound onto reels and unwound therefrom when necessary. It would have been obvious to one of ordinary skill in the art to have wound and unwound the polarizer films of British -727 to facilitate making the rotator element.

7. Claims 15-17, 20 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over British Patent Application 2,326,727 in view of British Patent Application 2,324,881.

The primary reference discloses the basic claimed method as set forth in paragraph 4, supra, British -727 essentially lacking a disclosure of directing light/UV through additional layers over the liquid crystal material to cure same and form an aligned liquid crystal layer. British -881 discloses using photopolymerization to cure reactive mesogens in a liquid crystal layer to make a polarization rotator. It would have been obvious to one of ordinary skill in the art at the time of invention to have employed a photopolymerization step as taught by British -881 in the method of British -727 to "lock" the alignment of the liquid crystal layer in place.

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8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Vargot whose telephone number is 703 308-2621.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308-0661.

M. Vargot

August 9, 2003

*M. Vargot*  
MATHIEU D. VARGOT  
PRIMARY EXAMINER  
GROUP 1300

8/9/03